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Relationship Between Technological Capability Towards Business Performance Moderated By Managerial Skill: A Study Of Broiler Contract Farming Industry In Malaysia

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Abstract

Broiler industry becomes one of the major industry in the world. The scenario in Malaysia also showed that broiler is one of the important industry that contributes to Malaysian GDP. Chicken meat is the most consumed protein and safe animal protein source since the white meat is safer than red meat. Besides that, it is the cheapest source of meat and protein. The production of chicken meat also has increased every year and the forecast of demand for poultry meat also increase until the year 2020. In order to improve sustainability of chicken meat production, this conceptual paper examines the relationship between technological capability and business performance in broiler industry in Malaysia with managerial skill as a moderating variable. Dynamic Capability View is used as a theory in this study to explain the importance of the resources towards performance in changing environment. The findings of the study should be able to enhance government and non-government organization's efforts to use all the available resources optimally for improving the performance.

Keywords: Dynamic capabilities; technology capability; managerial skill; business performance; broiler industry

1.0 INTRODUCTION

Broiler industry becomes one of the major industry in Malaysia. World Poultry (2014) stated the most probably reasons why Malaysian consume broiler. Chicken meat is the staple protein source for all ethnic in Malaysia. Other than that, it is safer to consume compared to red meat. Lastly, it is also cheaper source of meat and protein compared to beef and pork (Ismail and Hamid, 2011). The scenario in Malaysia also showed that broiler is one of the important industry. Based on Statistics Department Report (2015), the poultry industry is contributing 6.5% Malaysian Gross Domestic Product (GDP) to agriculture sector in 2014. In year 2014, broiler consumption in Malaysia is 1, 427.08 million metric tonnes (MT) (Department of Veterinary Services, 2014). Moreover, Department of Statistics (2015) and Utusan (2015) stated the estimated broiler consumption in year 2014 is 46.6kg per person. The demand of broiler is projected to rise to 1.8 million MT by 2020 (National Agro-food Policy 2011-2020).

Production of broiler for year 2014 is 1, 495.53 million MT (DVS, 2014). Based on the expectation in broiler consumption in 2020, the production of broiler also estimated to rise to 2.1 million MT in 2020 (Mohammad & Rosali, 2015; Department of Statistic, 2015). Malaysia has been self-sufficient in poultry production since 2002. Since then, the total domestic poultry production is increasing and growing and the average annual growth is 3.7% in between the year 2010 and 2014 (Department of Statistics, 2015). Self-sufficient ratio (SSR) of poultry in 2014 is 104.87%. Projection of SSR of poultry meat in Malaysia also indicates that there are increasing value from the year 2010 to 2020 and it is estimated can reach 131.6% in 2020 (Department of Veterinary Service, 2014). Therefore, the surplus of the production has created an opportunity for export market.

The industry of poultry is highly concentrated in Malaysia as it is monopolized by large companies or it is call integrators. Contract farming was introduced for survivability, sustainability and to enhance income to small poultry farmers. All inputs for the industry are written in the contracts. These include day old chicks and feeds are supplied and controlled by parent companies. Parents companies are big companies that specializing in producing, retailing and exporting the chicken based end product.

Malaysian broiler industry has the capacity to grow further, but the rising cost of production are limiting the growth. According to a report from USDA in The Poultry Site (2014), reduction in fuel subsidies, depreciation of Malaysia ringgit and implementation of minimum wages in 2013 are the factors for increasing in production cost. The cost of production of poultry meat was between RM4.47 and RM 4.96 per kilogram in 2014 and it is expected to increase every years (FLFAM, 2014). More than 65% of the cost are for animal feed production. Broiler sectors uses about 4 million tonnes of imported soybean and corn compound feed annually and it is estimated to increase 2-3% per year in demand for feed. The retail price of both ingredient is fluctuates due to world market price and depreciation of Malaysian ringgit. Therefore, the farmer faces greater challenges with escalating feed production cost (Eleventh Malaysia Plan, 2016). Clearly, reduction of cost of feed is crucial for poultry industry in order to remain sustainable and reduce the dependence on expensive and unstable cost of feed. The industry and farmers should seek for the cheaper feed alternatively using all resources, skills and technology capability to reduce the cost (Elsedig, Mohd and Fatimah, 2015). In line with the ideas, Minister of Agriculture, Datuk Seri Ahmad Shabery Cheek has been stated

that due to the volatility of Malaysian currency, chicken feed became more expensive. Therefore, Malaysian needs to improve its ability to produce chicken feed themselves using resources and technology optimally and not rely on other countries (Astro Awani, 2015).

Technological capability plays an important role in the success of any industry (Hsu, Tsai, Hsieh and Wang, 2014). The higher technological capability also manages to generate the higher return to a firm. Education and training (Gabdo, Mansor, Kamal & Ilmas, 2015) and managerial skills (Ariffin, Mohtar & Baluch, 2014) play important role for the farmers that engage in contract farming. There are a few studies had attempts to approach the problem of defining and describing the business performance of the broiler sector in Malaysia However, there are lack of study in respect to technological capability and managerial skill in agriculture compared to other sector. Therefore, technological capability and managerial skill study should be done in agricultural sector in order to identify the relationship between technological capability and firm performance with moderate by managerial skills (Reichert, Beltrame, Corso, Trevisan and Zawislak, 2011; Ariffin, Mohtar & Baluch, 2014).

There are a lot of factors that influence business performance, but this conceptual paper only emphasizes on technological capability and managerial skill since these factors are more suitable for the study. The purpose of this study is to examine the relationship between technological capability and business performance in broiler industry with managerial skill as a moderator. There are two research questions for the study. First, does any relationship exist between technological capability and performance? Second, does the level of managerial skill of the farmers have any moderating effect on business performance? This paper consists of three more sections: first, a review of literature related to Dynamic Capability, technological capability, managerial skill and business performance. Second, methodology that will be used in this study and the last section is the conclusion.

2.0 LITERATURE REVIEW

Dynamic Capabilities

There has been a major area of interest among strategic management scholar in respects to a relationship between firms' resources and performance. Resource-Based View (RBV) is one of the theories that has been used widely in explaining sustainable competitive advantage. The RBV stated that to be a competitive advantage company, the resources need to valuable, rare, imperfectly imitable and non-substitutable (VRIN) in a static and stable environment (Barney, 1991) and (Wernerfelt, 1984). But it does not explain how these resources expand over time and how it can be changed to uncertainty environment. The concept of dynamic capability derived from RBV of the firm and address the limitation of RBV. Teece, Pisano and Shuen (1997) proposed the concept of dynamic capability as "to build, integrate and reconfigure resources to cope with highly volatile environment". It is same with other seminal contributions that emphasize the dynamic capability focus on how valuable, rare, imperfectly imitable and non-substitutable resources can be adapted to changing environment (Teece, Pisano and Shuen, 1997; Eisenhardt and Martin, 2000; Ambrosini and Bowman, 2009).

The impact of dynamic capabilities on business performance has been an important issue among management scholars. There are a few empirical studies that tested dynamic capability in the various field. Protogerou, Caloghirou and Lioukas (2012) investigate the impact of dynamic capabilities on firm performance among Greek's manufacturing firm. They found dynamic capabilities have a significant effect on performance with mediated by technological capability and marketing capability as operational capabilities. According to Lin and Wu (2014), Taiwanese's firm valuable, rare, inimitable and non-substitutable resources (VRIN) be able to improve performance with dynamic capabilities as a mediating variable. Battisti and Deakins (2015) investigate the relationship between dynamic capabilities, the firm's resource base and performance in a post-disaster environment at the city of Christchurch in New Zealand after a major earthquake. They found dynamic capability significant with resource base and performance.

Dynamic Capability (DC) is relevant for this study for a reason. Malaysia's economy in 2016 was very challenging. This is due to fall of oil prices and the Malaysian ringgit fell against the US dollar. Hence, unstable condition and the uncertain environment has been created. Boehlje, Roucan-Kane and Bröring (2011) discuss the critical future issues for the agriculture sector. One of the critical issues is developing and adopting technology to long term financial success in environment uncertainty. They also proposed dynamic capability as a suitable strategic management theory in agriculture sector.

Technological Capability

Technology is one of the operational capabilities in dynamic capabilities. It is becoming an extremely important resource in broiler industry because responding to the uncertain environment that requires the industry to develop a new product. Technological capability refers to the capability to develop and design new process and product. It is able to improve in knowledge about the physical world in the unique way (Teece, Pisano and Shuen, 1997). Besides, technological capability is the vital role in developing new products and maintaining a competitive advantage (Hsu, Tsai, Hsieh and Wang, 2014). The higher technological capability also manages to generate the higher return to a firm. Therefore, it is necessary to increase the capacity of technology in the broiler industry in order to reduce the cost of chicken feed (Elsedig, Mohd and Fatimah, 2015).

There are a lot of literature in RBV that discussing the role of technological capability in building competitive advantage and performance. According to Inmyxai and Takahashi (2009), the high-technology capacity of the firm is able to improve productivity and thus, it can influence the development of the firm and contribute to competitive advantage. Moreover, technological capabilities also have a positive significant relationship with firm performance in a study about performance in regional polarization (Wu and Wu, 2013). As stated by Kamasak (2015) in his article, innovation strategy, and technological capabilities are the key drivers for innovation performance in Turkey. Ju, Zhou, Gao and Lu (2013) mention that performance for local firms has improved effect from technological capabilities rather than foreign firm in China industries. The technological capability also has been tested as a moderating variable between product innovation and firm performance among manufacturing firm in China. The findings contradicts when technological capability was negatively moderates the relationship and the moderating effect of technological capability will be more as technological turbulences increases (Su, Xie, Liu and Sun, 2013). Since there is lack of research in respect to technological capability in agriculture, research should be done in the area to confirm the association between technological capability and performance (Reichert, Beltrame, Corso, Trevisan and Zawislak, 2011).

Managerial Skill

Managerial skill is an essential skill for broiler operators and managers in managing the firm. As stated by Allahyari, Saburi and Keshavarz (2011), management skill is one of the important skill in making a correct decision in the agriculture sector. The skill can help farm operators and managers in managing any changes in agribusiness environment. Sh. Al-Rimawi, Karablieh, Al-Qadi and Al-Qudah (2006) found that level of expertise in economics and financial management among farmer in Jordan are relatively low. The adequacy of managerial skill will affect the plan and analyse for the financial performance of their farming activities. Ariffin, Mohtar and Baluch (2014) in their article mention that managerial skill can be moderating variable in the relationship between integrator involvement, grower involvement and business performance in term of financial performance and non-financial performance. They found an inconsistent result in explaining the effect of managerial skill in the relationship. In addition, few article has been mentioned that managerial skill is one of the important factor that affects the performance of farmer companies (Mutandwa, Taremwa and Tubanambazi, 2015).

Managerial skill will be a moderating variable in this concept paper. It should be able to moderate the relationship between technological capability and business performance. This is supported by Egbe and Benjamin (2015), mention that management skill is crucial to agribusiness. It enables farmers to confront with challenges and changes in agribusiness environment and high competition trade environment.

Business Performance

Business performance refers to "output or operation result after a certain period of time" (Centindere, Duran and Yetisen, 2014) and it can be define as financial performance, manufacturing performance and market performance. There are many previous researches study business performance as their dependent variable. Pun and Hosein (2007) emphasized on performance indicator in agriculture. They stated that performance measurement is a process of quantifying the effectiveness and efficiency of activities that lead to performance in organizations. There are six dimension of performance for broiler agribusiness which is able to measure the performance of broiler sector, namely quality, time, flexibility, finance, customer satisfaction and human resource.

As stated by Barney (1991), RBV explains how superior resources and capabilities of the firm are able to enhance firm performance and the internal organization resources are the crucial to success. Dominic and Theuvsen (2015) also stated in their study that firm is able to survive in a competitive and dynamic market with the application of proper strategic management practices even though the firm is in small size. In order to achieve excellent performance in agribusiness, a firm should have good knowledge in business policy and strategies to manage the firm.

■3.0 CONCEPTUAL FRAMEWORK

Figure 1 below show the conceptual framework for this study. The conceptual framework consist three variables. Technological capabilities as independent variable, managerial skill as moderator and business performance as a dependent variable.

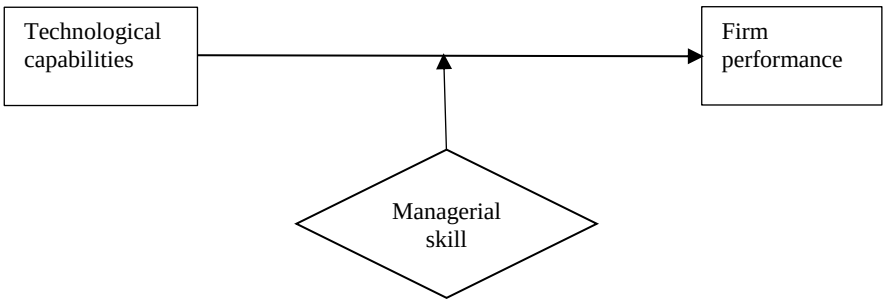

Figure 1 A Conceptual framework for the relationship of technological capability towards business performance by managerial skill.

■4.0 METHODOLOGY

Research Design

The main purpose and objective of this research is to investigate the relationship between technological capability towards business performance. Besides, the research also aims to investigate the effect of managerial skill as moderator between technological capability and business performance relationship. Questionnaire will be used in order to accomplish the research main objective. Statistical Package for Social Science (SPSS) version 22.0 will be used in analyzing the data.

Research Instrument and Participants

The questionnaire for the study will be adapted from Wilden & Gudergan (2014), Allahyari, Saburi & Keshavars (2011), Ariffin, Mohtar & Baluch (2014) and (Pun and Hosein, 2007) which will be administered to broiler contract farmer in Peninsular Malaysia that registered with Department of Veterinary Services. Based on DVS (2014) there are 2608 broiler contract farmer around Peninsular Malaysia and 335 farmers

will be the sample. The questionnaire will consists of two parts. Part I requires background information on respondents' age, gender, educational qualification, type of school etc. Part II contains questions items requesting the respondents to indicate the level of importance of each item on technological capability, managerial skill and business performance.

5.0 CONCLUSION

In recent years, dynamic capabilities is one of the research favorite area and get attention from scholars. But, there are only a few research that focusing on agriculture sector. This conceptual study only focus on technological capability and managerial skill. Technological capability is one of the valuable and important resources in improving agriculture sector. New technologies, human capital management, and skills are crucial elements in transforming broiler industry for future agribusiness (Malaysia Productivity Corporation, 2015). The findings from the study can help and enhance government and non-governmental organization (NGO) in an effort to use all the available resources optimally in improving the broiler production and performance in order to achieve Eleventh Malaysia Plan (2016-2020).

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